

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/002594

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ C01G23/02, C01G35/02, C01B33/107

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ C01G1/00-57/00, C0B33/107, B01J8/24, B01J8/44

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2005
Kokai Jitsuyo Shinan Koho	1971-2005	Toroku Jitsuyo Shinan Koho	1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 6776/1987 (Laid-open No. 115435/1988) (Osaka Titanium Co., Ltd.), 25 July, 1988 (25.07.88), Description, pages 2 to 11 (Family: none)	1-17
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 83316/1988 (Laid-open No. 10437/1990) (Osaka Titanium Co., Ltd.), 23 January, 1990 (23.01.90), Description; pages 1 to 2 (Family: none)	1-17

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search
13 May, 2005 (13.05.05)

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31 May, 2005 (31.05.05)

Name and mailing address of the ISA/
Japanese Patent Office

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 58-156535 A (Tioxide Group PLC.), 17 September, 1983 (17.09.83), Description; pages 2 to 4; drawings & DE 3303099 A & GB 2115802 A	1-17
Y	JP 11-190591 A (Tokyo Gas Co., Ltd.), 13 July, 1999 (13.07.99), Description; pages 2 to 3; Figs. 1, 3 (Family: none)	1-17
Y	JP 11-190590 A (Tokyo Gas Co., Ltd.), 13 July, 1999 (13.07.99), Description; pages 2 to 3; Fig. 2 (Family: none)	1-17
A	JP 5-254837 A (Ishihara Sangyo Kaisha, Ltd.), 05 October, 1993 (05.10.93), (Family: none)	1-17